



Title	SUPPLEMENTARY NOTES ON SOME ANTHOMYIID FLIES FROM KAMCHATKA AND THE KURIL ISLANDS, WITH DESCRIPTION OF A NEW SPECIES (DIPTERA : ANTHOMYIIDAE)
Author(s)	SUWA, Masaaki
Citation	Insecta matsumurana. Series entomology. New series, 58: 145-155
Issue Date	2001-12
Doc URL	<a href="http://hdl.handle.net/2115/9908">http://hdl.handle.net/2115/9908</a>
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**SUPPLEMENTARY NOTES ON SOME ANTHOMYIID FLIES FROM  
KAMCHATKA AND THE KURIL ISLANDS, WITH DESCRIPTION OF A NEW  
SPECIES (DIPTERA: ANTHOMYIIDAE)**

By MASAAKI SUWA

*Abstract*

SUWA, M. 2001. Supplementary notes on some anthomyiid flies from Kamchatka and the Kuril Islands, with description of a new species (Diptera: Anthomyiidae). *Ins. matsum. n. s.* 58: 145–155, 20 figs.

Three anthomyiid species from Kamchatka and the Kuril Islands are dealt with. One is *Botanophila kurilensis* sp. nov. based on material from North Kuril Islands, which is the species misidentified with *Botanophila clavata* (Hennig, 1970) by Suwa et al. (2000). The others are *Botanophila tuxeni* (Ringdahl, 1953) from North Kuril Islands and *Delia jilinensis* Chen, 1988, from Kamchatka. *B. kurilensis* is distinguished from *B. clavata* by the head with epistoma projecting forward beyond tip of parafrontal angle and by the cercal plate of the male terminalia with apical median projection longer than lateral lobes.

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## INTRODUCTION

Anthomyiid flies from Kamchatka and the Kuril Islands were recently enumerated by Suwa et al. (2000) on the basis of the known records in various literature and of the material obtained during the Biological Expedition of the Natural History Museum, Chiba to the Kamchatka Peninsula and the North Kuril Islands in 1996–1997, and the International Kuril Islands Project (IKIP) in 1995–1996.

In the enumeration given by Suwa et al. (l.c.), there are found some species which have been little known after the original description. In the present paper, three species are dealt with. One is "*Botanophila clavata* (Hennig, 1970)" recorded from North Kuril Islands, which is here recognized as a new species and given a description. The others are *Botanophila tuxeni* (Ringdahl, 1953) from North Kuril Islands and *Delia jilinensis* Chen, 1988, from Kamchatka, and they are redescribed.

## DESCRIPTIONS

### *Botanophila kurilensis* sp. nov. (Figs. 1–10)

"*Botanophila clavata* (Hennig, 1970)": Suwa et al., 2000: 165.

Type series. Kuril Islands. Onekotan Is.: near Krenitsyna Cape, southern end of Island, inland of small unnamed bay close to mouth of Trudny River, 4 ♂ (one the holotype), 1 ♀, 9.viii.1996 (ON96MO-030B). Deposited in the Laboratory of Systematic Entomology, Hokkaido University.

The specimens examined were dried from immersed material in 80% alcohol.

♂. Wing-length 4.2–4.8 mm. Body dark brown to blackish in ground colour, paler on orbits and lower half of interfrontalia. Antennae blackish; palpi dark brownish, paler basally; haustellar mentum dark brownish, distinctly pollinose; orbits whitish grey pollinose, brownish on parafrontals; occiput brownish grey pollinose, with a purple tinge. Mesonotum brownish grey pollinose; in frontal angle of view, with median and paramedian vittae and lateral patches obscurely or rather distinctly visible, and pollinosity rather thinly discernible between the markings; in caudal angle of view, pollinosity rather densely discernible, with median vitta sharply visible before suture and obscurely behind suture, paramedian vittae and lateral patches obscurely visible. Legs brownish to dark brown. Wings slightly tinged with brownish yellow, rather distinctly yellow at base; calyptae slightly tinged with yellow; halteres pale yellow at knob.

Head about 1.2 times as high as long (Fig. 1, holotype); frons slightly wider than anterior ocellus; interfrontalia slightly narrower than anterior ocellus, with *if* distinct or rather strong; parafrontals bearing 4–5 strong and a few weaker *ori* mingled with some short setulae;  $A_3$  1.5–1.7 times as long as wide; arista distinctly pubescent, with longest hairs about as long as basal diameter of arista; orbits at parafrontal angle about as wide as  $A_3$ ; genae less than  $A_3$ -width in height, with 7–15 genal setae in about 2 rows; epistoma (lower facial margin) projecting forward beyond tip of parafrontal angle; occiput setulose on postocular disks.

Mesonotum with some (4–7) pairs of *pre-acr*, of which 1 or 2 pairs are rather strong, and with about 10 setulae between the rows; distance between setae of the longest pair being as long as or a little longer than that to adjacent *dc*-row; posterior *ph* fine to rather



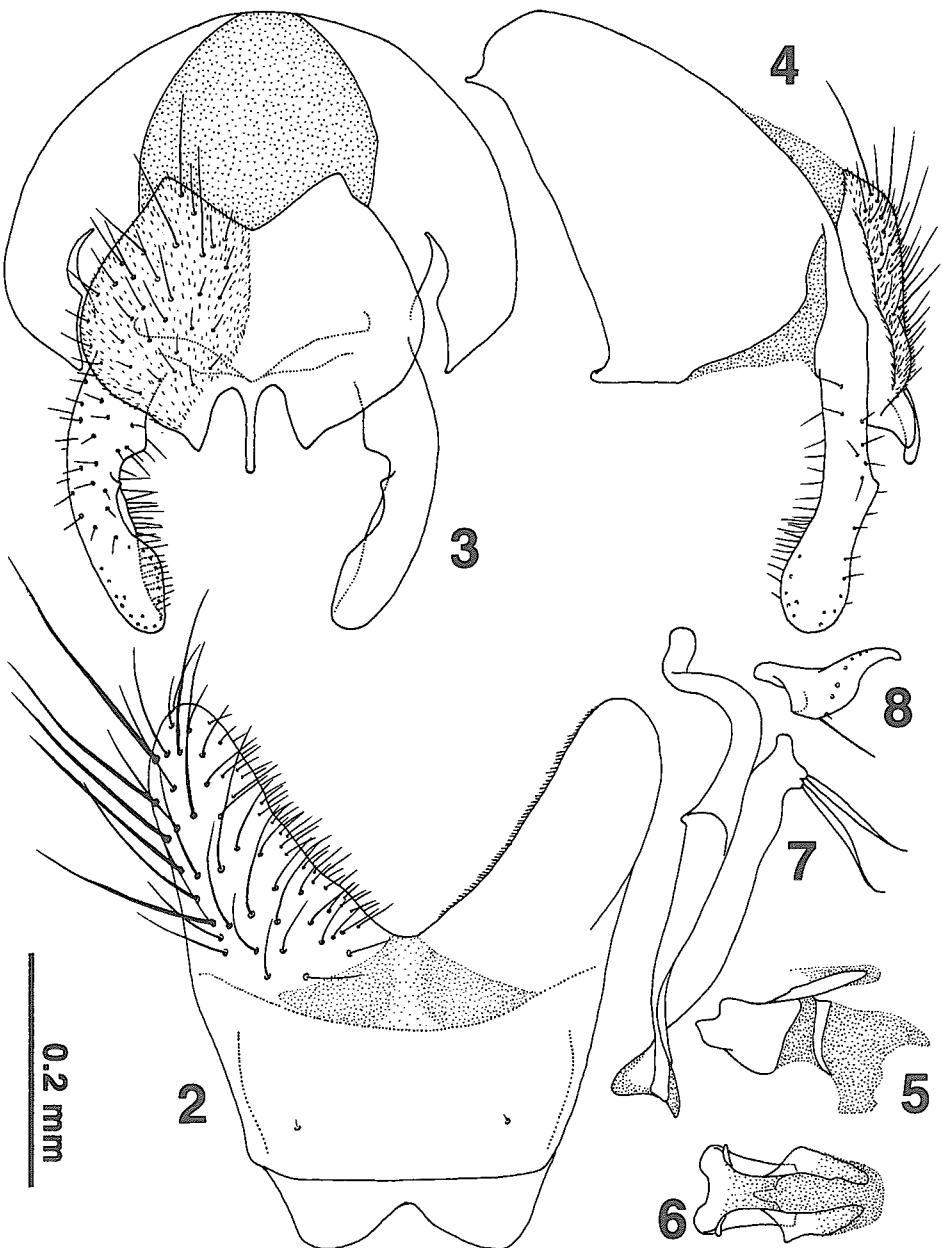
Fig. 1. *Botanophila kurilensis* sp. nov., ♂. Holotype from Onekotan Is.

strong; *pra* rather well developed, about as long as, or a little shorter than, posterior *ntpl*; notopleuron with no accessory setulae (1 setula present on left notopleuron and 3 setulae on right in 1 paratype); posterior *ntpl* unusually duplicated in 1 paratype; mesopleuron with 1 or a few distinct or rather strong anterior *mpl*, and with 1 strong *pstg* and 1 or a few weak and about 10 finer associated setulae; *stpl* 1:3, below the anterior with 1 weak or rather distinct seta distinguishable from adjacent setulae, the lowest posterior being a little to much stronger than adjacent setulae though much shorter than the uppers; scutellum setulose on dorsal surface laterally.

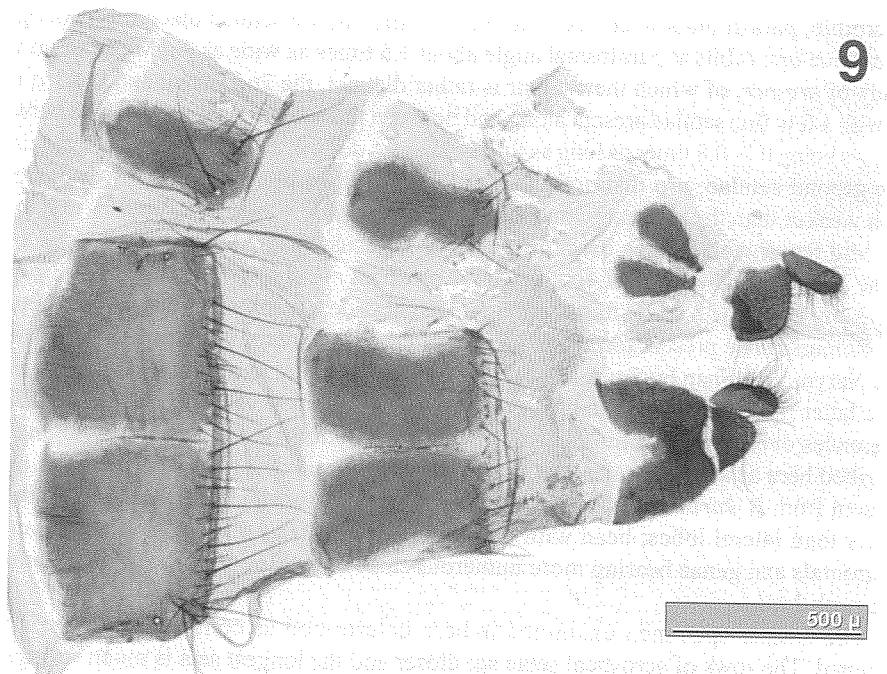
Abdomen depressed, slightly longer than twice of the width; 6th tergite without setulae; terminalia as in Figs. 2–8; cercal plate with apical median projection exceeding the tip of lateral lobes; pregonite with flattened setae; postgonite with a single distinct seta.

Mid femur with a few or some *av* on basal half, longest one as long as or a little shorter than height of the femur, and with 5–6 *pv* on basal half or two-thirds, longest one distinctly longer than height of the femur; *f*<sub>3</sub> with a row of 6–8 long *av*, and with 1 long *pv* near base, 1–3 long *pv* on median third, and 1 long *pv* near apex; *t*<sub>1</sub> with 1 minute *ad* and 1 (2 on right leg in 1 paratype) short *pv*, the *ad* scarcely or only a little stronger than adjacent setulae; *t*<sub>2</sub> with 1 *ad*, 1 *pd* and 2–3 *p-pv*; *t*<sub>3</sub> with 2–3 *av*, 4–6 *ad*, 3–4 *pd*, and 1–2 weak *pv* (indiscernible on right or left leg in 2 specimens), and with apical *pd* at most as long as the tibial diameter. Wings with costal thorns small; costa bare ventrally; *dm-cu* nearly straight.

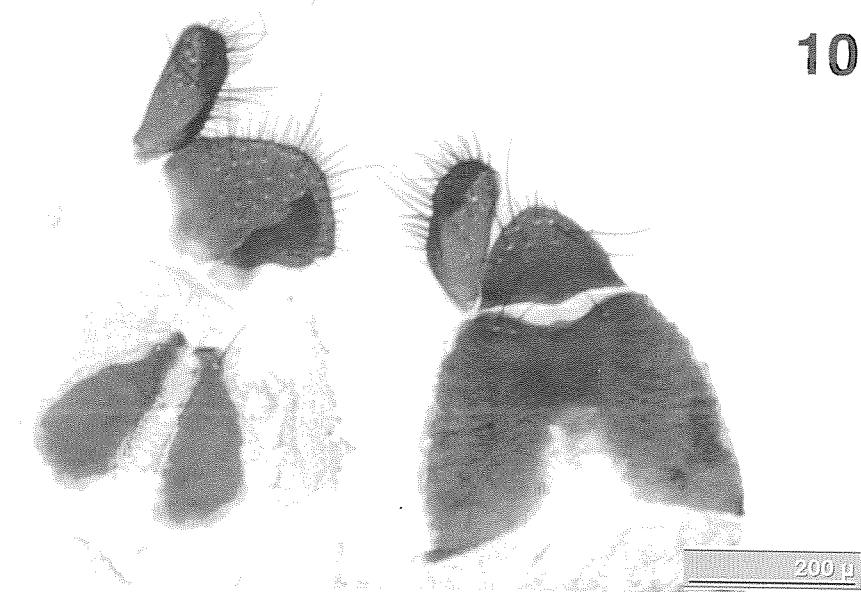
♀. Wing-length 4.3 mm. Head yellowish in ground colour on lower half of interfrontalia and on parafacials and genae anteriorly; body with pollinosity much paler



Figs. 2–8. *Botanophila kurilensis* sp. nov., ♂. 2, 5th sternite; 3, hypopygium, dorsal view; 4, ditto, lateral view; 5, basiphallus and distiphallus, lateral view; 6, basiphallus, dorsal view; 7, hypandrium and pregonite; 8, postgonite. Holotype (Figs. 3–8) and paratype (Fig. 2) from Onekotan Is.



9



10

Figs. 9–10. *Botanophila kurilensis* sp. nov., ♀. 9, ovipositor; 10, 8th segment and proctiger. Paratype from Onekotan Is.

than in male.

Interfrontalia about 1.3 times as wide as parafrontal, with *if* strong, some minute setulae discernible; parafrontals with 3 *ori* and 3 *ors*, some minute setulae discernible along *ori* and outside *ors*; orbits at parafrontal angle about 1.5 times as wide as  $A_3$ . Mesonotum with 3 pairs of *pre-acr*, of which the 1st pair is rather distinct, the 2nd strong and the 3rd fine, and with a few fine setulae present along and between the rows of *pre-acr*, distance between the rows being 0.7–0.8 times as long as that to adjacent *dc*-row; posterior *ph* not distinguished from ground setulae; *pra* distinctly longer than posterior *ntpl*; *stpl* 1:2, lower posterior much weaker than the upper. Ovipositor as in Figs. 9–10.

Mid femur with 2 *av* on basal third and 4 *pv* on basal half;  $t_1$  with 1 *ad*, 0–1 *pd* and 1 *pv*, the *ad* being well developed;  $t_2$  with 1 *ad*, 2 *pd* and 2 *p–pv*;  $t_3$  with 2–3 *av*, 5 *ad*, 3 *pd* and 4 weak *pv*. Wings with costal thorns stronger than in male, much longer than costal spinules.

Remarks. The present form was misidentified with *B. clavata* (Hennig, 1970) known from Naryn, Tien Shan by Suwa et al. (2000). Its male terminalia are really similar to those of the latter figured in the original description. There are, however, found some significant differences even in the terminalia and also in other external structures. It is, therefore, described here as a new species. Judging from the original description of *B. clavata*, it is different from *B. kurilensis* in male as follows: cercal plate with apical median projection shorter than lateral lobes; head with epistoma situated behind tip of parafrontal angle; parafrontals and genae bearing more numerous setae or setulae;  $t_1$  with a long and strong *pv*;  $t_2$  with 2 *ad*.

The female specimen examined is here determined as conspecific to the males examined. The rows of acrostical setae are closer and the longest seta is much stronger in the female than in the males. The present determination of the female is rather tentative.

*Botanophila tuxeni* (Ringdahl, 1953)  
(Figs. 11–16)

*Pegohylemyia tuxeni* Ringdahl, 1953: 462; Hennig, 1972: 425.

*Botanophila tuxeni*: Suwa et al., 2000: 166.

Material examined. Kuril Islands. Shumshu Is.: Lake Bol'shoye, 3 ♂, 21–22.vii.1997 (R.B. Kuranishi, CBM-ZI 82759–82761), 2 ♂, 21.vii.1997 (A. Saito, CBM-ZI 82762–82763). Paramushir Is.: Shelekhovo, Shimoyur River, 1 ♂, 17.vii.1997 (A. Saito, CBM-ZI 82764); 4 km north of Severo-Kuril'sk, 1 ♂, 24.vii.1997 (A. Saito, CBM-ZI 82765). Onekotan Is.: near Krenitsyna Cape, southern end of Island, inland of small unnamed bay close to mouth of Trudny River, 1 ♂, 9.viii.1996 (ON96MO-030B).

Distribution. Kuril Islands; Western China; Iceland.

♂. Wing-length 4.2–4.3 mm. Frons about as wide as anterior ocellus; interfrontalia half or more as wide as anterior ocellus, with *if* distinct and as long as or shorter than ocellar setae; in 1 specimen, interfrontalia interrupted by contiguous parafrontals, probably due to shrinkage of eyes; parafrontals bearing 5–7 strong and a few weaker *ori* mingled with some short setulae;  $A_3$  1.8–1.9 times as long as wide; arista distinctly pubescent, with longest hairs as long as to rather distinctly longer than basal diameter of arista; orbits at parafrontal angle 1.0–1.3 times as wide as  $A_3$ ; genae slightly lower to a little higher than  $A_3$ .

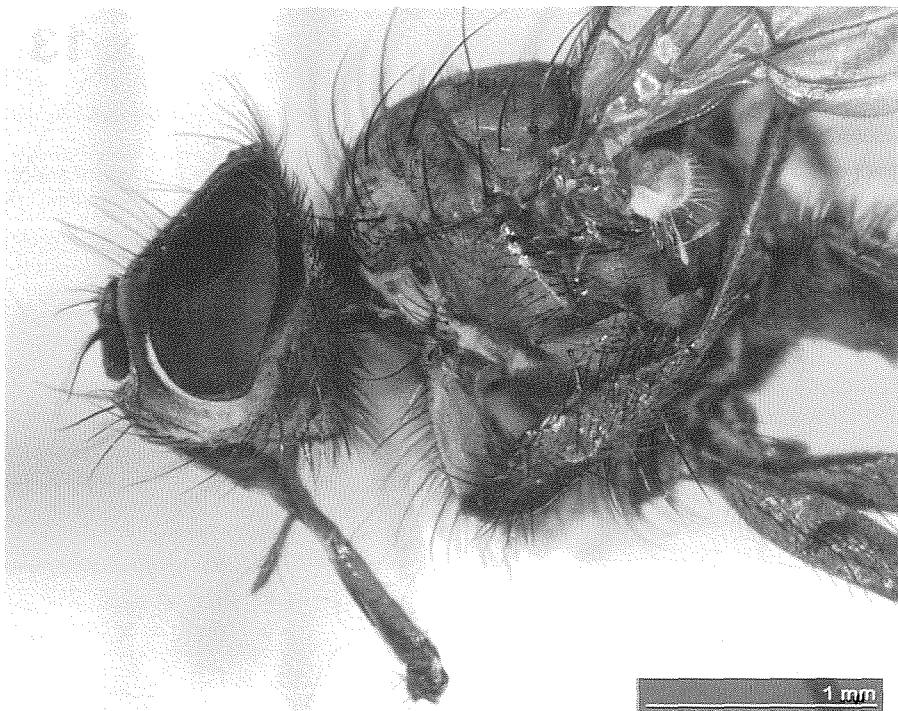


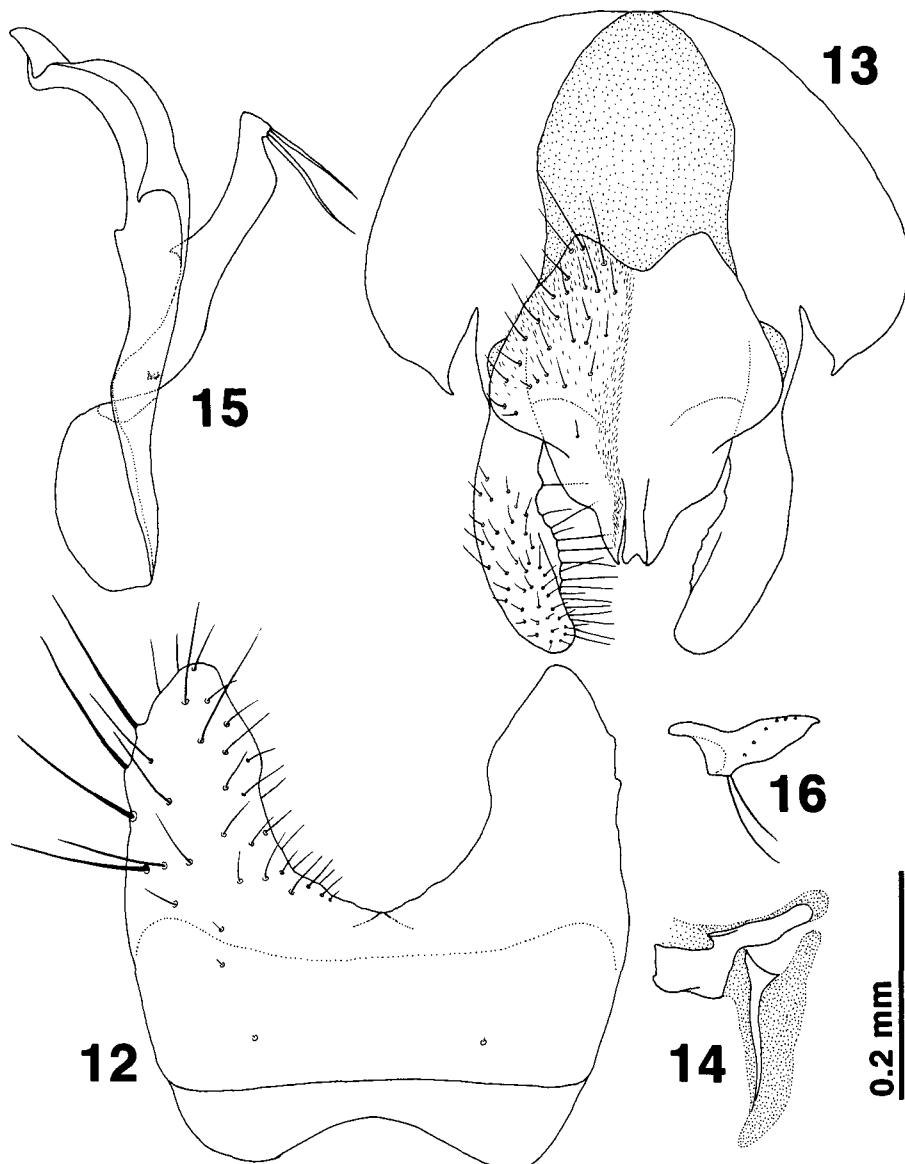
Fig. 11. *Botanophila tuxeni*, ♂. Shumshu Is.

width, with genal setae in 2 rows in most specimens; epistoma (lower facial margin) projecting forward beyond tip of parafrontal angle; occiput setulose on postocular disks.

Mesonotum with 1 pair of strong and 2–3 pairs of much weaker *pre-acr*, and with a few or some setulae between the rows; the strong *pre-acr* distinctly shorter to a little longer than posterior *ntpl* and distinctly longer than *pra* (as long as *pra* in 1 specimen); rows of *pre-acr* closer to each other than to adjacent *dc*-rows except in the smallest specimen, in which the distance between the rows of *pre-acr* at the strong pair is nearly equal to that to the adjacent *dc*-row; posterior *ph* scarcely distinguishable from ground setulae; *pra* much shorter than posterior *ntpl*; notopleuron with no accessory setulae; mesopleuron with 1 or 2 anterior *mpl* a little stronger than adjacent setulae; *stpl* 1:3, the lowest posterior much weaker than the uppers; scutellum with a few or some setulae on dorsal surface laterally.

Abdomen depressed, as long as or slightly longer than twice of the width; 6th tergite without setulae; terminalia as in Figs. 12–16; 5th sternite sparsely setose, with outer marginal setae shorter than processes; hypopygium with cercal plate divided into three projections on distal area, the median projection narrow and shallowly bifurcated apically; surstyli simply shaped and rather densely setulose, with inner setulae much longer than outers; pregonite with setae flattened and curved outward; postgonite with 2 long setae.

Mid femur with 4–5 short and rather stout *av* on basal half, longest one shorter than, at most as long as, height of the femur, in a few cases some *av* on distal half more or less developed and forming a row together with proximal ones; with 4–6 *pv* on basal half, most of them being much longer than height of the femur; *f*<sub>3</sub> with 2–4 long *pv* on basal half and 1 long *pv* near apex; *t*<sub>1</sub> with 1 small *ad* (indiscernible in 1 specimen) and 1 (2 on right or left



Figs. 12–16. *Botanophila tuxeni*, ♂. 12, 5th sternite; 13, hypopygium, dorsal view; 14, basiphallus and distiphallus; 15, hypandrium and pregonite; 16, postgonite. Paramushir Is.

leg in 2 specimens) *pv*; *t*<sub>2</sub> with 0–1 *av*, 1 *ad*, 2 *pd* and 1–3 (mostly 2) *p–pv*; *t*<sub>3</sub> with 1–3 (mostly 2) *av*, 3–5 (mostly 4) *ad*, 3 *pd*, and 1–4 weak *pv*, and with apical *pd* weak, at most as long as the tibial diameter. Wings with costal thorns easily distinguishable from costal spinules; *costa* bare ventrally; *dm–cu* nearly straight.

♀. Unknown to me.

Remarks. In a redescription of *B. tuxeni* given by Hennig (1972), he states: "Drittes Fühlerglied etwa 1 1/2 mal so lang wie breit. Fühlerborste kurz pubeszent, die Länge der Härchen ist deutlich geringer als die Dicke der Fühlerborstenwurzel. ... *f*<sub>2</sub> in der

Proximalhälfte mit verlängerten av und pv, ... " The third antennal segment and the aristal hairs may be influenced in measurement according to equipment or to workers. It is, however, difficult to describe the anteroventral setae of the mid femur of the Kuril specimens as "verlängerten" or "lengthened." Although it is necessary for confirmation of this discordance to examine the type material of *B. tuxeni*, the present Kuril form is here referred to the species because of agreement in other characters including the genital structures.

*Delia jilinensis* Chen, 1988  
(Figs. 17–20)

*Delia jilinensis* Chen, in Fan et al., 1988: 188; Suwa et al., 2000: 166.

Material examined. Kamchatka. 5 km west of Mt. Vilyuchinsky, 1 ♂, 1 ♀, 3.vii.1996 (R.B. Kuranishi, CBM-ZI 82773–82774). 15 km south of Paratunka, 6♂, 1 ♀, 3.vii.1996 (R.B. Kuranishi, CBM-ZI 82775–82781).

Distribution. Kamchatka; Northeastern China.

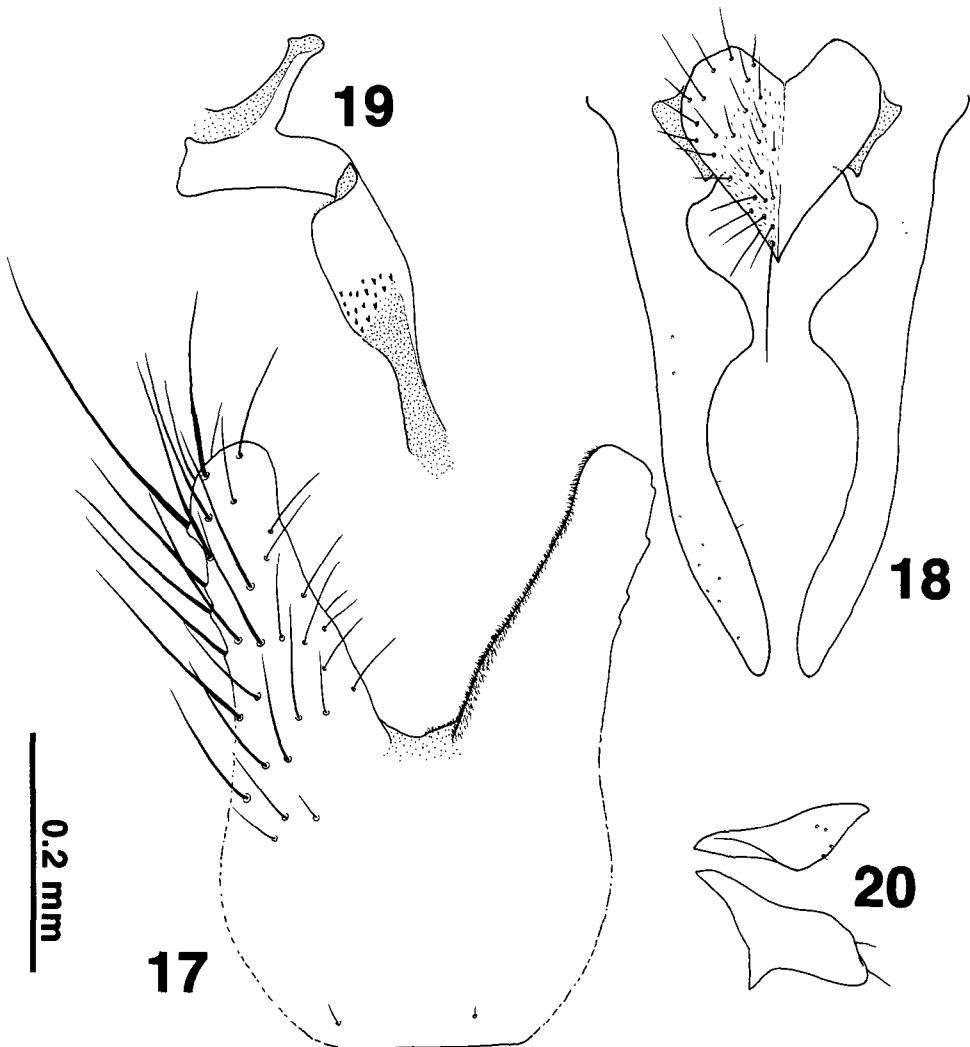
♂. Wing-length 4.2–4.5 mm. Body including legs black in ground colour, more or less brownish on frons near antennal bases in a few specimens; in pollinosity whitish grey and a little bluish, on orbits silvery grey, on mesonotum and abdomen a little to rather distinctly brownish. Mesonotum in frontal angle of view almost wholly pollinose, with short black vittae sharply appearing along rows of postsutural *dc* and with lateral patches obscurely or rather distinctly discernible. Abdomen with median vitta as wide as or a little wider than *f*<sub>3</sub>-height on 2nd tergite and broadening caudad, and with fore-marginal bands rather broad, in a few specimens 5th tergite with markings much broadened and almost wholly blackish in caudal angle of view. Wings distinctly tinged with dark brown; calyptae whitish, very slightly tinged with yellow; halteres yellowish at knob.

Frons about as wide as anterior ocellus; interfrontalia linear caudad, with *if* strong though shorter than ocellar setae; parafrontals with 4–6 *ori* and without *ors*; *A*<sub>3</sub> 1.7–1.9 times as long as wide; arista distinctly pubescent, with longest hairs as long as or slightly longer than basal diameter of arista; orbits at parafrontal angle about as wide as *A*<sub>3</sub>; genae slightly higher than *A*<sub>3</sub>-width, with genal setae in a single row; epistoma situated behind parafrontal angle; occiput bare on postocular disks.

Mesonotum with 2–3 pairs of *pre-acr*, 2nd pair being the longest and longer than *pra*; posterior *ph* scarcely to a little developed; *pra* shorter than posterior *ntpl*; notopleuron with no accessory setulae; *stpl* 1:2, below the posteriors with 1 weak or rather distinct seta distinguishable from adjacent setulae in a few specimens; scutellum without accessory setulae on dorsal surface, or nearly so.

Abdomen depressed, gently narrowing caudad, about 3 times as long as wide; terminalia as in Figs. 17–20; 5th sternite largely bare on basal plate; cercal plate with apical pair of setae distinctly longer than others on the plate; surstyli with a triangular lobe developed on inner margin near base; pregonite with 2 short setulae discernible; postgonite with no distinct setulae; distiphallus semicylindrically sclerotized basally and scarcely sclerotized dorsoapically, with denticles on the basal sclerotization laterally.

Mid femur with no distinct *av* and 4–7 distinct or rather strong *pv* on basal half; *f*<sub>3</sub> with *av* on basal third or half scarcely differentiated from ground setulae, some (4–7) *av* on distal half longer than height of the femur, 1 small *pv* scarcely or rather easily discernible near base, and 1 or a few rather long *pv* near apex; *t*<sub>1</sub> with no *ad* and 1 (2 in 2 specimens) *pv*,



Figs. 17–20. *Delia jilinensis*, ♂. 17, 5th sternite; 18, hypopygium, dorsal view; 19, basiphallus and distiphallus; 20, pregonite and postgonite. Kamchatka.

and with pointed apical *pv*;  $t_2$  with 0–1 *av*, 1 *ad*, 2 *pd* and 2 *p–pv*;  $t_3$  with 3–5 *av*, 4–5 *ad*, 3–5 *pd*, and a row of 7–11 *pv*. Wings with costal thorns much stronger than costal spinules and about as long as *h*-vein; costa bare ventrally; *dm–cu* nearly straight.

♀. Wing-length 4.5–4.7 mm. Interfrontalia brownish in ground colour on lower half. Wings tinged with brownish yellow. Frons 0.43 times as wide as head in a specimen of good condition; interfrontalia 1.6–1.9 times as wide as parafrontal; 2 (1 on the right in 1 specimen) *ori* and 3 *ors*; orbits at parafrontal angle a little wider than  $A_3$ ; genae about as high as orbital width at parafrontal angle.

Mesonotum with *pre-acr* all shorter than *pra*; posterior *ph* scarcely developed; *stpl* 1:2, below the posteriors without an additional seta distinguishable from ground setulae.

Mid femur without distinct *pv*;  $t_1$  with 1 *ad*, 1 *pd* and 1 *pv*;  $t_2$  with 1 *av*, 1 *ad*, 2 *pd* and 2 *p–pv*;  $t_3$  with 3 *av*, 4 *ad*, 3–4 *pd*, and 0–1 *pv*. Wings with costal spinules and costal thorns more prominent than in male.

Remarks. The surstyli with a broad lobe on inner margin near base are unique to the *Delia jilinensis* superspecies in the sense of Griffiths (1991), who recognized two species, *D. jilinensis* and *D. lobistyla* Griffiths, 1991, in this group. The former is known from eastern Eurasia and the latter from western North America. We know some species distributed both in eastern Eurasia and in western North America, e.g. *Pegomya nigra* Suwa, 1974, and *Pegomya alticola* Huckett, 1939. Compared with these species, the *D. jilinensis* group might have an older history in utilizing the Beringia for its dispersal.

#### ACKNOWLEDGEMENTS

The material used in this paper were collected by Dr. R. B. Kuranishi and Dr. A. Saito, the Natural History Museum, Chiba, and by Dr. M. Ôhara, The Hokkaido University Museum. I am deeply grateful to them.

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